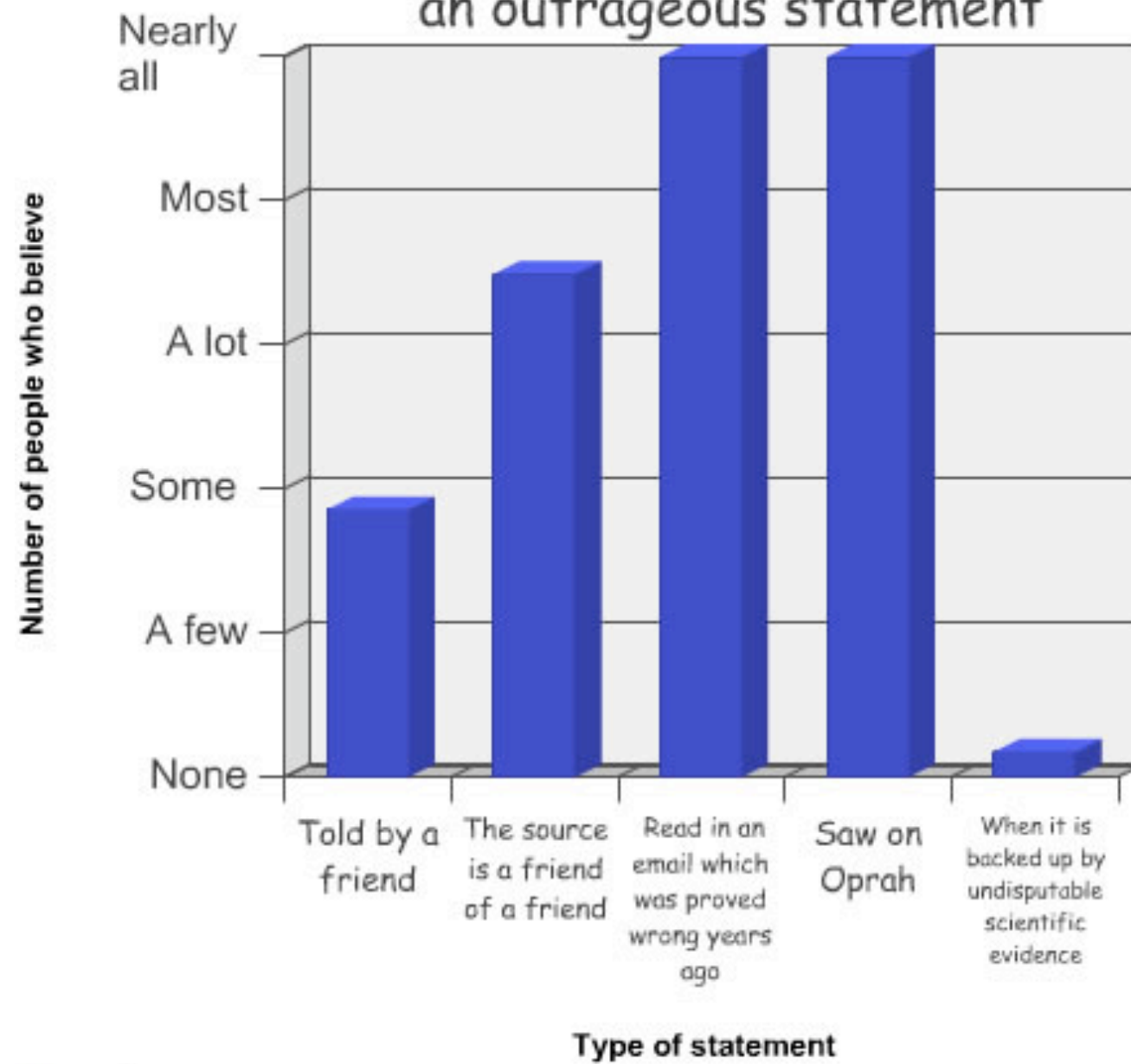


Aligning to Learning Standards: Math for SEDOL Students

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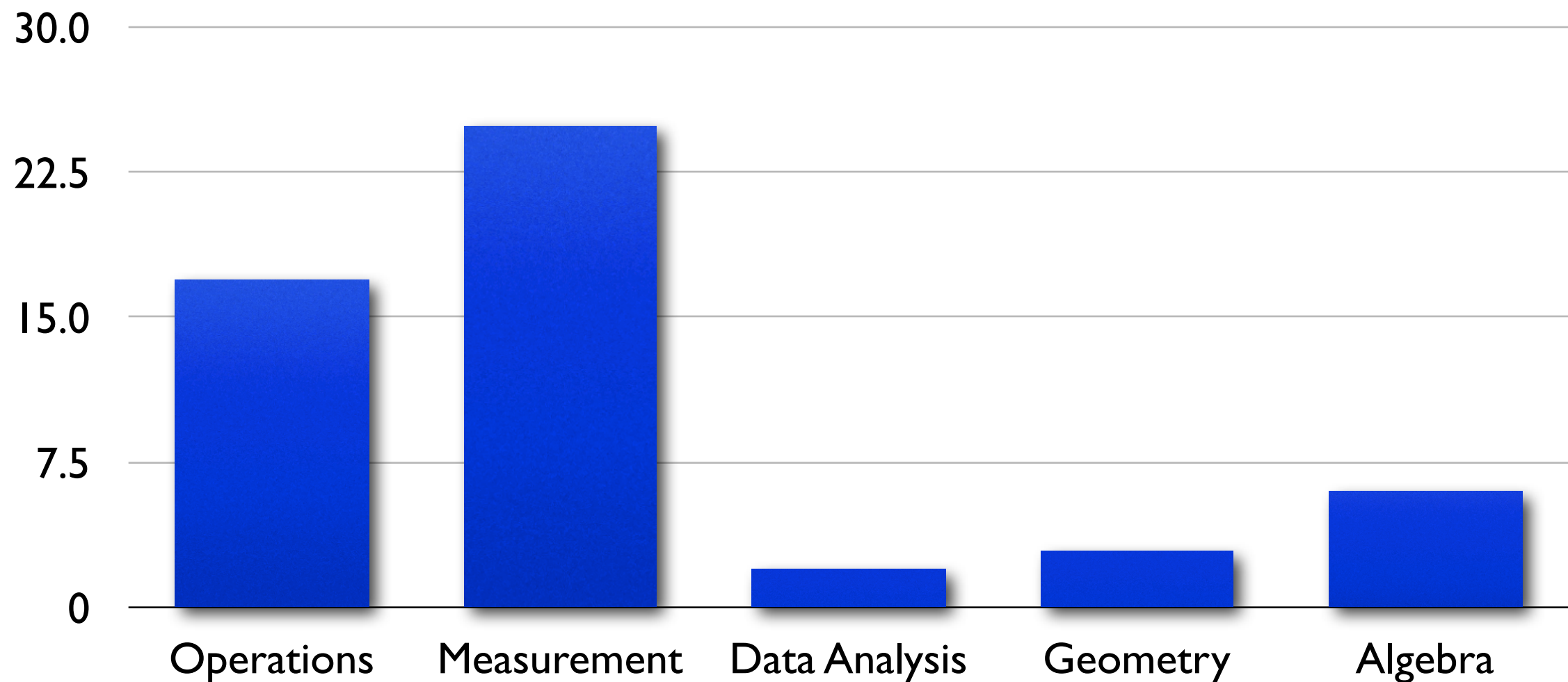
Chance of people believing an outrageous statement



SEDOL ALTERNATE CURRICULUM FRAMEWORK – MATH – STAGE I-J	
TIMELINE: 3rd QUARTER	ALGEBRA
LEARNING STANDARDS	8.11.04 Determine a specific term, a finite sum, or a rule that generates terms of a pattern. 8.11.12 Create and connect representations that are tabular, graphic, numeric, and symbolic from a set of data.
ESSENTIAL QUESTION	What is needed to complete a floor plan?
FUNCTIONAL SKILLS	<p>Few students will: Create a chart to match the floor plan and several charts</p> <p>Some students will: Use an equation to find the next number in a pattern Create a pattern of 3 or more components Navigate school building independently Complete a simple color chart Determine one missing number in a pattern Determine two missing numbers in a pattern, given the rules of the pattern Navigate the school building safely with support.</p> <p>All students will: Navigate the school building safely with support Complete pattern activity with support</p>
ACADEMIC VOCABULARY	Calculate - to determine mathematically Rule - procedure
BEST PRACTICES	A multi-sensory balanced math approach including daily computation practice, direct teacher modeling, guided student practice, independent practice, station work, and problem solving activities
TOOLS	Please refer to your discipline specific SEDOL Technology Steps.
ASSESSMENT EVIDENCE	<p>Formative and Summative Assessments Formative: before, during and after instruction (e.g., teacher observation, teacher/student conferences, progress monitoring, rubrics, portfolios) Summative: outcome based (e.g., ISAT/IAA, end of unit chapter test, benchmarking, rubrics) Please refer to your SEDOL Math Assessment Plan</p>

Math: Focus on Money

Literature Review Categories for Math
67 experiments (65 articles)



Browder, D., Spooner, F., Ahlgrim-Dezell, L., Harris, A. & Wakeman, S (2006). A comprehensive review of research to teach math to students with significant cognitive disabilities. *Exceptional Children*.

Academics vs. Life Skills

- Both can be taught; both are important
- Academics can be taught in ways that are meaningful
- We do not know what students can learn until we try teaching the content
- Life skills are not a prerequisite to learning academics
- Students who are not disabled do not have to master all life skills to be eligible to learn to read; double standard
- Balance is needed in planning IEPs and developing daily schedule

Teaching to NCTM Standards: What really

- 5 Component Skills

- Number and Operations
- Geometry
- Algebra
- Data Analysis
- Measurement

- 5 Processing Skills

- Problem Solving
- Reasoning & Proof
- Communication
- Connections
- Representation

NCTM Principals of Math Instruction

- Equity

- Curriculum

- Teaching

- All students must have opportunity and support to learn mathematics
- Coherent, focused on important mathematics, well articulated across the grades . . prepare students to solve problems across settings
- Selecting suitable materials, tools, techniques to support learning & pursuing continuous self improvement

NCTM Principals of Math Instruction

- Learning

- Build new knowledge from prior knowledge: students learn more and better when they take control of their learning

- Assessment

- Integral part of instruction ...guides student learning

- Technology

- Technology is essential in teaching and learning

U.S. Department of Education (2008)

Teaching Math to all students

- Teach students using *explicit instruction* on a regular basis.
- Teach students using *multiple instructional* examples.
- Have students *verbalize decisions and solutions* to math problem.
- Teach students to *visually represent the information* in the math problem.
- Teach students to solve problems using *multiple/heuristic strategies*.
- Provide *ongoing formative assessment data and feedback* to teachers.
- Provide *peer-assisted instruction* to students.

How do we do all of this?

- Meet IEP Goals
- Meet AYP
- Individualize
- Differentiate
- Teach things in a way that we may never have learned

A Balanced Math Approach:

- Computation
- Teacher Modeling
- Small Group Problem Solving and Skill Work
- Independent Math Work
- Cooperative Problem Solving
- Stations

Balanced Literacy & Balanced Math

How are they alike?

- Word Work
- Independent Reading/Writing
- Read/Write Aloud
- Shared Reading/Writing
- Guided Reading/Writing
- Centers
- Computation
- Independent Math Work
- Teacher Modeling
- Cooperative Problem Solving
- Small Group Problem Solving and Skill Work
- Stations

Computation (Daily)

- 5 to 10 minutes a day review
- Number Sense focus
- Games, Interactive lessons, Worksheets
- Scaffold Computational Skills for each student

Computation (Math Fluency)

- Number Recognition
- One-to-One Correspondence
- Counting
- Addition, Subtraction, Multiplication, Division

Teacher Modeling

- Daily
- Beginning of lesson (set purpose)
- Read A Loud (Marilyn Burns Series)
- Based on the SEDOL Curriculum Frameworks Unit of Study aligned to Illinois Learning and Assessment Framework

Small Group Problem Solving and Skill Work

- Daily
- Based on on-going assessments
- Flexible groupings
- Work on skills with teacher at their instructional level
- Based on the SEDOL Curriculum Frameworks

Independent Math Work

- Daily
- Practice Skills at level of independent success based on going assessments

Cooperative Problem Solving

- Three times a week
- Small groups of students
- Students challenged and need to solve the problems
- Teacher rotates and facilitates discussions, but does not lead to answers
- It is okay to pause activity and return to it later

Stations (Centers)

- Used in conjunction with Small Group Problem Solving and Skill Work
- Behavior management skills to make this successful need to be taught first
- Stations need to have different levels for students success (not one size fits all)

On-Going Assessment:

- Checking to see if all students:
 - know what they should
 - understand
 - can do what they should
- Use to adjust instruction when any of them do not - or are not ready to move ahead.

Common Assessments

- Future Goal: Screener, Progress Monitoring Tools
- ISAT Focus and IAA Focus